



October 4, 2016

#### **VIA ELECTRONIC FILING**

Marlene H. Dortch, Secretary Federal Communications Commission 445 12th Street, SW Washington, DC 20554

Re: Amendment of the Commission's Rules with Regard to Commercial Operations in the

3550-3650 MHz Band, GN Docket No. 12-354

Dear Ms. Dortch:

On September 30, 2016, Dave Wright and Paul Petrus of Ruckus Wireless, Inc. (a wholly owned subsidiary of Brocade Communications Systems, Inc.) ("Ruckus"), met with Edward Smith, Wireless Advisor to Chairman Wheeler; Paul Powell and Kamran Etemad of the Wireless Technology Bureau, and Ira Keltz and Rashmi Doshi of the Office of Engineering and Technology; and Johnna Thomas, Wireless Advisor to Commissioner Rosenworcel. During those meetings, Messrs. Wright and Petrus discussed the subject matter presented in the attached presentation.

If you have any questions, please do not hesitate to contact me.

Respectfully submitted,

/s/ Steve Martin

Steve Martin
Senior Vice President/GM Emerging Technologies
Ruckus Wireless, Inc.

Attachment



# 3.5 GHz CBRS Discussion and OpenG<sup>TM</sup> Overview

for the Federal Communication Commission September 30, 2016

#### Ruckus BROCADE BROCADE ■

## Now part of Brocade

Storage Networking

Data Center Networking

Edge Networking

Mobility Solutions

BROCADE

Wi-Fi Infrastructure
Location, Security, Policy
Cloud Services
In-Building LTE (OpenG)







## **Brocade | Ruckus Post-Acquisition**

\$2.7+ Billion in Annual Revenue

5,700+ Employees Worldwide

Customers in 148+ Countries Edge Networks:

• 650+ engineers

Wireless growth > industry avg. Wired growth > industry avg. # 1 Service
Provider
Wi-Fi

H 1 Storage Area Networking

Hospitality
Wi-Fi



Data Center Networking

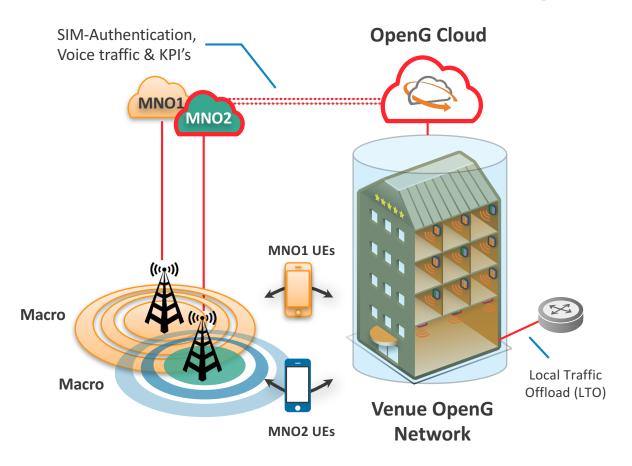
# 3 Enterprise Edge Networking in the U.S. & EMEA

# 3 Enterprise Wireless LAN



## Ruckus OpenG<sup>TM</sup> End to End Solution for

## **End-to-End Solution for In-Building Cellular Coverage**



- 1 Coordinated Shared Spectrum
- 2 LTE Small Cells
- 3 Neutral Host Network (NHN)
  - In-Building Cellular deployed like Wi-Fi



## The Ruckus SmartCell<sup>TM</sup> Q210 LTE Access Point (CBSD)



#### Field add-on to H510 WiFi AP

- Snaps onto bottom of H510
- Power from H510 USB
- LAN from H510 Ethernet switch

#### **Ideal for Hospitality & MDU**

- Approx. 1,000 sq ft coverage
- 16 concurrent active LTE Users
- 150 Mbps throughput



## Other Planned OpenG Access Points (CBSDs)

#### Enterprise/Carrier Class Indoor AP

 Standalone, planned as an overlay to existing Wi-Fi networks on an n:1 basis

#### Carrier Class Outdoor AP

- Leverage our heritage with outdoor Wi-Fi APs
- Tx Power analogous to 5GHz UNII 1 and 3







## Benefits of Ruckus OpenG



#### For Enterprises

- Significant reduction in customer and employee dissatisfaction
- Supports subscribers from all MNOs
- No complex technical signoff with MNOs
- Predictable cost and service models



#### For Managed Service Providers

- New business opportunity, practical in-building cellular coverage for mid-tier enterprise & venues
- Similar tools and processes as Wi-Fi managed services



#### For Mobile Network Operators

- Zero-cost in-building coverage and capacity expansion at massive scale
- Maintain subscriber revenue and control
- KPI monitoring to ensure adequate end user experience within buildings

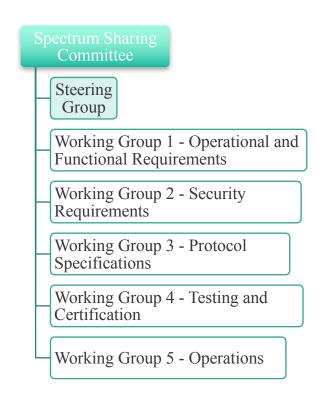


# **Wireless Innovation Forum Spectrum Sharing Committee**



## **Ruckus Participation**

- Member of the Steering Group
- Active in all Working Groups
- Chair the WG1 Domain Proxy Task Group



#### Ruckus



#### The CBRS Alliance

#### Mission & Purpose

Support the development, commercialization, and adoption of LTE solutions for the US 3.5 GHz Citizens Broadband Radio Service (CBRS).

- Evangelize CBRS technology and applications
- Define and drive necessary technology requirements
- Establish certifications to ensure vendor interoperability

#### Key Objective

Widespread adoption of CBRS Alliance Certified infrastructure equipment

### **Ruckus Participation**

- Founding Member / Board Member
- Active in all Working Groups
- Chair the Marketing Working Group



## Ruckus pre-Commercial CBRS Activity

#### Multiple demonstrations and trials of CBRS Technology

- First demonstrations in May/June
- Utilizing CBRS Band experimental licenses
- Collaborating with SAS providers and client technology partners
- Demonstrating incumbent protection by SAS
- Field trials have begun (network operators, neutral host providers, and client device manufacturers)
- Demonstrating commercial viability and good user experience



## THANK YOU!

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